



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/533,840

05/04/2005

Shinichiro Hashimoto

92478-2700

8653

52044

7590

08/20/2008

SNELL & WILMER L.L.P. (Matsushita)

600 ANTON BOULEVARD

SUITE 1400

COSTA MESA, CA 92626

EXAMINER

ABDIN, SHAHEDA A

ART UNIT

PAPER NUMBER

2629

MAIL DATE

DELIVERY MODE

08/20/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/533,840	Applicant(s) HASHIMOTO ET AL.	
	Examiner SHAHEDA A. ABDIN	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 11 27 and 30-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 11, 27 and 30 is/are rejected.
- 7) ☒ Claim(s) 9-10, 28-29- is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Abstract

4. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.

- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. In claims 1, lines 1-16, a PDP apparatus claim and In lines 17-21 a driving method claim of PDP renders the claim indefinite because it is unclear whether the limitation(s) following the part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Kanazawa (US Patent No: 6621229 B2).

(1) Regarding claim 1:

Kanazawa et al. discloses a PDP apparatus (in Fig. 7 and 8 discloses a general and conventional structure of a plasma display) comprising a panel unit (i.e. plasma display panel 10) and a driving unit (i.e. the units 14, 15 and 16 altogether considered as a driving unit) the panel unit (i.e. 10) including a first substrate (first substrate) on which a plurality of pairs of first and second electrodes (i.e. scan electrodes (i.e. 11, Fig. 7) and sustain electrodes (12, in Fig. 7) are formed at first substrate) are formed and a second substrate (second substrate) on which a plurality of third electrodes (i.e. data electrode, 13) are formed, the first substrate and the second substrate being opposed to each other with a discharge space (i.e. gap) there between so as to form discharge cells at areas where the plurality of pairs of first and second electrodes

Art Unit: 2629

intersect the plurality of third electrodes (see column 1, lines 12-20) , the driving unit driving the panel unit to display an image according to a display method that includes a write period and a sustain period, (column 1, lines 20-45), by, in the sustain period (i.e. sustain discharge period, Fig. 3A-3E), applying a voltage to the plurality of pairs of first and second electrodes (i.e. scan electrodes and sustain electrodes) and applying a voltage to the plurality of third electrodes (i.e. address electrodes) (see Fig. 3 (A-E)). Kanazawa in Fig. 3 (A-E) further discloses a voltage wave form in sustain period (sustain discharge period) applied to the third electrode (i.e. address electrode) which rises start time (i.e. square pulse start time) is differed in terms of rise start time of plurality of first electrode (i.e. Y electrodes) and second electrode (X electrodes) reach at a predetermined I period column 7, lines 40-67.

(2) Regarding claim 19:

Kanazawa teaches in the sustain period , a cycle of the voltage waveforms applied to the plurality of third electrodes (i.e. address electrode) is equal to an integral multiple of a cycle of a waveform of the voltage applied to the plurality of pairs of first and second electrodes (i.e. X2, Y2) (see Fig. 6A-6E, and column 9, lines 5-45).

(3) Regarding claim 20:

Note that the limitations are already discussed in claim 1 above. Claim 1 is an apparatus claim and claim 20 is a method claim (see the discussion in claim 1).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 2-3, 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanazawa (US Patent No: 6621229) in view of Nakamura (US Patent No: 5990630).

(1) Regarding claim 2

Note that Kanazawa discloses the plurality of third electrodes (i.e. address (2) electrode, A1-A4) and in the sustain period, the driving unit controls the rise start timing but Kanazawa does not disclose the third electrodes are divided into a plurality of groups each of which includes two or more third electrodes (i.e. data electrodes) and in the sustain period the driving unit controls the rise start timing in units of groups.

However, Nakamura in the same field of endeavor discloses the third electrodes are divided into a plurality of groups (DA and Db) each of which includes two or more third electrodes (address electrodes) and in the sustain period the driving unit (i.e. the driving units for PDP) controls the rise start timing in units of groups (column 4, lines 58-67 , column 6, lines 12-22, and Fig. 7)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate the method of third electrodes divided into a plurality of groups each of which includes two or more third electrodes as taught by Nakamura in to the display device of Kanazawa so that the third electrodes could be divided into a plurality of groups and each of group could be included two or more third electrodes and in the sustain period and the driving unit could control the rise start timing in units of groups. In this configuration the system would provide an optimum current control in the plasma display device (Nakamura, column 4, lines 48-51).

(2) Regarding claim 3:

Note that Kanazawa teaches the driving unit includes:

voltage applying circuit applying the voltage to the plurality of third electrode (i.e. data electrodes) in the sustain period and Nakamura discloses a plurality of voltage applying circuits unit (i.e. 24a and 24b), and timing signal generation unit (i.e. controller 31 Fig. 10) that output a signal indicating the rise start timing (column 6, lines 36-48, column). Thus, the reference of Kanazawa and Nakamura meet the claim limitations.

(3) Regarding claim 21:

Note that the limitations are already discussed in claim 2 above. Claim 2 is an apparatus claim and claim 20 is a method claim (see the discussion in claim 2).

(4) Regarding claim 22:

Kanazawa discloses a voltage applying circuit (i.e. data driving circuit) that

applies a voltage is connected to each of the plurality of groups of third electrodes (i.e. data electrodes), and in the sustain period Fig. 3(A-E),(column 1, lines 21-45 and column 7, lines 40-60), Nakamura discloses the rise start timing is controlled (i.e. controlled by 31) in such a manner that a signal indicating the rise start timing is input into the voltage applying circuit (24A and 24B) (column 6, lines 36-48, column). Thus, the reference of Kanazawa and Nakamura meet the claim limitations.

12. Claims 4-8, 11-18, 23-27, and 30-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanazawa as applied to claim 1 above, and further in view of Chien (US Pub. No: 2003/0042855).

(1) Regarding claim 4:

Note that Kanazawa teaches in the sustain period, the driving unit (i.e. 16, Fig. 7) controls the voltage waveforms applied to the plurality of third electrodes (i.e. data electrode), but both Kanazawa and Nakamura do not disclose the driving unit controls voltage waveforms applied to the plurality of third electrodes so as to start rising within a time period shorter than a half cycle of a waveform of the voltage applied to the plurality of pairs of first and second electrodes.

However, Chien in the same field of endeavor teaches the driving unit controls voltage waveforms applied to the plurality of third electrodes (i.e. Ai) so as to start rising within a time period shorter than a half cycle of a waveform of the voltage applied to the plurality of pairs of first and second electrodes (i.e. scan electrodes and sustain

electrode, see Fig. 7) (note that the illustration in Fig. 7, potential of the third electrode (address electrodes) during the sustain period is applied through the driver section and increase the potential so as to generate a sustain discharge between the first and second electrodes (i.e. sustain and scan electrodes) and the potential change occurred in address electrodes in such that start rising time shorter than a half cycle of a waveform of the voltage applied to the plurality of pairs of first and second electrodes) (also see [0012], [0029-0030], and [0038]).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate the method of potential change in address electrodes as taught by Chien in to the PDP of Kanazawa as modified by Nakamura so that the potential change could be occurred in address electrodes in such that start rising time could be shorter than a half cycle of a waveform of the voltage applied to the plurality of pairs of first and second electrodes. In this configuration the system would have a high quality display performance in the display device (Chien, [0032]).

(2) Regarding claim 5:

Chein teaches, in the sustain period, the driving unit (110) controls the voltage waveforms (i.e. Square wave) applied to the plurality of third electrodes (i.e. address electrodes) so as to start rising (start rising of square wave at address electrodes), after a time at which the voltage applied to the plurality of pairs of first and second

Art Unit: 2629

electrodes (i.e. X, Yi) reaches a predetermined level, but before a time at which a discharge is generated by the voltage applied to the plurality of pairs of first and second electrodes when the voltage is assumed not to be applied (i.e. zero voltage applied to the X, Yi electrodes) to the plurality of third electrodes (i.e. zero or constant voltage applied to the X, Yi electrodes before the start square rising at address electrodes, see Fig. 7, [0029-0030]).

(3) Regarding claim 6:

Chien teaches, wherein in the sustain period [0027], a voltage waveform applied to a first electrode (e.g. X) and a voltage waveform applied to a second electrode (e.g. Yi) paired with the first electrode (i.e. X) have a same cycle (i.e. the series' of square wave), but are different from each other in terms of a timing of application, by half the Cycle (see the illustration in Fig. 7, [0029-0030], abstract).

(4) Regarding claim 7:

Chein teaches, wherein in the sustain period [0027], a voltage waveform (i.e. a square waveform) applied to at least one of the plurality of third electrodes (i.e. any electrode from Ai) starts to fall (i.e. falling the square wave) at a different timing (i.e. separate timing), from a voltage waveform applied to an adjacent third electrode (i.e. any adjacent address electrode), which is set relative to a time at which the voltage applied to the plurality of pairs of first (X) and second electrodes (i.e. Yi) reaches a predetermined level (see Fig. 7, [0029-0030], and abstract).

(5) Regarding claim 8:

Chein teaches, in the sustain period [0027], the driving unit controls (i.e. 110) the voltage waveforms applied to the plurality of third electrodes (i.e. A1) so as to start falling within a time period shorter than a half cycle of a waveform of the voltage applied to the plurality of pairs of first and second electrodes (i.e. X, Yi) (see the illustration in Fig. 7, [0029-0030]).

(6) Regarding claim 11:

Chein teaches wherein each of the voltage waveforms applied to the plurality of third electrodes (i.e. Ai) in the sustain period is a pulse waveform of a substantially same width (see Fig. 7, [0029-0030]).

(7) Regarding claim 12:

Chein teaches wherein the driving unit i.e. 110) drives the panel unit (i.e. 100) by repeating a sub-field (e.g. SF1) including the write period (i.e. AR1 or ES1) and the sustain period (SS1), and the driving unit controls the rise start timing in units of sub-fields (see Fig. 3 and 4, [0008]).

(8) Regarding claim 13:

Chein teaches two or more sub-fields (e.g. SF1, SF2) constitute a sub-field group, and the driving unit (110) controls the rise start timing in units

of sub-field groups (see Fig. 4, [0008]).

(9) Regarding claim 14:

Chein teaches wherein the driving unit drives the panel unit (i.e. 110) by repeating a sub-field including the write period and the sustain period, and a plurality of sub-fields constitute a field, and the driving unit controls the rise start timing in units of fields (see Fig. 3 and 4, [0008]).

(10) Regarding claim 15:

Chein teaches wherein two or more fields (i.e. SF1-SF8) constitute a field group, and the driving unit (110) controls the rise start timing in units of field groups (see Fig. 3 and 4, [0008]).

(11) Regarding claim 16:

Chein teaches wherein the write period (RS1 or AR1) and the sustain period (i.e. SS1) constitute a sub-field (SF1), and a plurality of sub-fields (SF1-SF8) constitute a field (see Fig. 4, [0008]), and

for each of the voltage waveforms (square waves) applied to the plurality of third electrodes (i.e. Ai), an average time period, in each sub-field or field, from a time at which the voltage applied to the plurality of pairs of first and second

electrodes (X, Y1) reaches a predetermined level to a time at which the voltage applied to the plurality of third electrodes (i.e. A1) starts to rise is substantially same (see Fig. 4 and 7, [0008], [0029-0030]).

(12) Regarding claim 17:

Chein teaches, wherein in the sustain period, a cycle of the voltage waveforms applied to the plurality of third electrodes (i.e. Ai) is equal to a half cycle of a waveform of the voltage applied to the plurality of pairs of first and second electrodes (see the illustration in Fig. 7, [0029-0030]).

(13) Regarding claim 18:

Chein teaches wherein in the sustain period (0027), a cycle of the voltage waveforms (i.e. square waves) applied to the plurality of third electrodes (i.e. Ai) is equal to a cycle of a waveform of the voltage applied to the plurality of pairs of first and second electrodes (i.e. X, Yi) (see the illustration in Fig. 7, [0029-0030]).

(14) Regarding claims 23 and 24:

Note that the limitations (i.e. claim 23 and 24) are already discussed in claims 4 and 5 respectively, see the discussion in claims 4 and 5 above.

(15) Regarding claims 25 -27:

Note that the claim limitations (i.e. claims 25, 26, 27) are already discussed in claim 6, and 8 respectively. See the discussion in claims 6, 7 and 8.

(16) Regarding claims 30-38:

Note that the claim limitations (i.e. claims 30-38) are already discussed in claims 11 -19 respectively. See the discussion in claims 11-19 above.

Allowable Subject Matter

13. Claims 9-10 and 28-29 are objected to as being dependent upon a rejected base claim, but would be allowable if written in independent form including all of the limitations of the base claim and any intervening claims.

14. The following is the examiner's statement for allowance:

(1) Regarding claims 9 and 28:

The most pertinent prior art of record Kanazawa (US Patent No: 6621229), Nakamura (US Patent No: 5990630), Shinoda (US Patent No: 5661500), and Chien (20030042855 A1) do not disclose or suggest **at least one of a rising portion and a falling portion of each of the voltage waveforms has a gradient, and a voltage waveform applied to at least one of the plurality of third electrodes has a**

different gradient for at least one of a rising portion and a falling portion, from a waveform applied to an adjacent third electrode.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's discloser.

Shinoda (US Patent No: 5661500) discloses a full color surface discharge type Plasma display device.

Inquiry

16. Any inquiry concerning this communication or earlier communication from the examiner should be directed to **Shaheda Abdin** whose telephone number is (571) 270-1673.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard HJerpe** could be reached at (571) 272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published

Art Unit: 2629

applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about PAIR system, see <http://pari-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Shaheda Abdin

08/17/2008

/Richard Hjerpe/

Supervisory Patent Examiner, Art Unit 2629

.....